Product Release Notice

KINGSTAR 3.1 Release

General Availability Release Date

April 28, 2017

Product Overview

KINGSTAR products are designed for industrial machines requiring motion control and positioning systems. KINGSTAR's all-software approach sets it apart from other machine control solutions.

Using the EtherCAT standard; the power of Industrial PCs; and the Windows operating system, enhanced by IntervalZero's RTX64 hard real-time software that transforms Windows into a real-time operating system (RTOS), you can create software-only, PC-based machine controllers that lower the costs of industrial machines while delivering excellent precision and performance.

There are two product lines: **KINGSTAR Soft Motion** and **KINGSTAR EtherCAT.**

KINGSTAR Soft Motion is a complete software solution that creates PC-based machine controllers with premium precision and performance.

KINGSTAR EtherCAT provides support for CANopen over EtherCAT and simplified configuration of EtherCAT networks.

New Features and Resolved Issues

KINGSTAR Soft Motion

- This release improves the flexibility of KINGSTAR by providing the ability to easily support new hardware. The KINGSTAR ESI Import Tool is capable of reading device EtherCAT Slave Information (ESI) files and configuring them for use within the KINGSTAR subsystem. Through this tool, users can easily add new devices and optionally customize their KINGSTAR configuration. Users can also modify existing hardware that comes pre-configured with the KINGSTAR product. (KS-198, KS-153)
- Adds arc motion support for axis groups. (KS-201)

- Adds PLCOpen CAM support through the functions MC_CamIn, MC_CamOut, and MC_CamTableSelect. (KS-21)
- Adds axis configuration blocks to allow developers to read and write all axis parameters with a simple list and a single function block. (KA-216)
- Adds Homing On Position to set the current position as home. (KS-225)
- Adds a check that the homing settings are sent to the drive when needed. (KS-234)
- Adds MC_Jog function and function block. (KS-208)
- Adds MC_Inch function and function block. (KS-209)
- Now supports a motion speed input value of 0 for a pause command. (KS-226)
- Modifies the motion control functionality to a .NET class interface. (KS-60)
- Modifies the KINGSTAR managed code interface to use classes instead of structures. (KS-39)
- Adds SDO error codes to MC_Error. (KS-233)
- Resolves an issue regarding the potential for the motion queue to get locked up if a write parameter command is sent while the SDO queue is full. (KS-222)
- Resolves an issue regarding the DC delay calculation not supporting timestamp overflow. (KS-202)
- Resolves an issue regarding command splitting between packets not working during DC and scan. (KS-203)
- Resolves an issue regarding the interpolation getting hung if the minimum velocity is greater than the jerk. (KS-224)
- Resolves an issue regarding MC_MoveVelocity function. (KS-255)
- Resolves an issue regarding MC_GroupReset function. (KS-256)
- Resolves an issue regarding MC_MoveCircularAbsolute function. (KS-257)

PLC

- Upgraded to ISaGRAF Workbench version 6.5. (KS-239)
- Adds the option to check for a Customer ID to limit systems that can run PLC compiled code. (KS-246)
- Adds start/stop commands to the KINGSTAR PLC icon to allow starting and stopping of the subsystem. (KS-206)

  > **Commented [TR1]:** Is "icon" the right word here?

- Resolves an issue regarding the data types not being cleaned up on PLC target update. (KS-228)

Samples

- Provides a simplified MFC sample application, similar to the existing WPF sample, which shows how to enumerate the devices on your EtherCAT network and allows for the enabling and moving of the motors. (KS-82)
- Improves the RtxInterface sample to add code for multi-axis support. (KS-230)

- Includes example code for EcatScanBus (KS-200)
- Provides a code sample for MC_MoveCircular function in the Real-Time Win32 API. (KS-231)
- Provides a code sample for MC_Log function in the Real-Time Win32 API. (KS-242)
- Provides a code sample for MC_GroupAbortCommand function. (KS-252)

Documentation

- Improves the look and feel of the product documentation by using HTML5 offline help.
- Improves product documentation by including a KINGSTAR overview architecture diagram to the documentation. (KS-160)

KINGSTAR EtherCAT

- Adds and improves default support for the following hardware:
  - Faulhaber Motion Controllers Series MC 5004,MC 5005, MC 5010, MCS (KS-212)
  - ITRI AC Servo Drive 16 bit (KS-223)
  - KEB COMBIVERT F6-K (KS-218)
  - Kollmorgen AKD EtherCAT Drive (KS-210)
  - Mitsubishi MR-J4-TM (replacing MR-J3-A)
  - Shihlin Electric SDP-E
  - Beckhoff EtherCAT I/Os EL1144, EL3164, EL9410, and EL9512 (KS-249)
  - Delta/Syntek EC 5621 revision 0x00100203 (KS-232)
  - ITRI PIC32 Slaves

Availability

KINGSTAR 3.1 Soft Motion and KINGSTAR EtherCAT are available beginning April 28, 2017 through Partners and by contacting Sales: KINGSTARSales@kingstar.com or (781) 996-4481. Evaluation Downloads can also be requested here.

We look forward to comments and feedback. If you have any recommendations or wish to suggest any product enhancements, please contact Product Management at: KINGSTARSales@kingstar.com.